

NEW EEL GENUS, *CIRRIMAXILLA*, AND DESCRIPTION OF
THE TYPE SPECIES, *CIRRIMAXILLA FORMOSA*
(PISCES: MURAENIDAE) FROM SOUTHERN TAIWAN

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ABSTRACT

A new genus, *Cirrimaxilla*, belonging to Uropterygiinae is described here on the basis of the new type species, *Cirrimaxilla formosa* collected from southern Taiwan. *Cirrimaxilla* is distinguished from other genera of Muraenidae by having the following characters: many cirri on both jaws, lower jaw protruding, rim of posterior nostrils petal-like, hooked fang-like teeth, obscure branchial pore, and small adult size. *C. formosa* is characterized by having a relatively large mouth, sharp snout, shorter tail length, 132 total vertebrae, 76 preanus vertebrae, dorsal-fin origin above 114th vertebra, anal-fin origin below 117th vertebra, and body tawny with numerous brown tiger-like bands.

This specimen was caught by the junior author from a tidal pool of Nan-wan Bay which is located in the Kenting National Park, southern tip of Taiwan on 18 June 1987. The type specimen was deposited in the Museum of the Institute of Zoology, Academia Sinica (ASIZP). It is here described as a new genus and species from a female holotype only. All counts and measurements were in accordance with those used by Böhlke et al. (1989), Hatooka (1984), and Sasaki and Amaoka (1991). Counts of vertebrae including hypural plate and fin rays were observed from the radiographs. Total length and head length are expressed throughout as TL and HL, respectively.

Subfamily Uropterygiinae

Cirrimaxilla new genus

Type Species.—*Cirrimaxilla formosa* new species (Nan-wan, Taiwan).

Diagnosis.—This genus is distinguished from other genera in the family Muraenidae by the following combination of characters: dorsal and anal fins restricted to tail tip; tail shorter than trunk; margin of both jaws with many cirri; especially on tip of lower jaw; lower jaw protruding; rim of posterior nostril petal-like; hooked fang-like teeth; obscure branchial pore; small body size in adult.

Comparisons.—*Cirrimaxilla* belongs to Uropterygiinae owing to the fin apparatus restricted to the posterior part of tail. Table 1 compares some important characters of *Cirrimaxilla* with those of other genera of Muraenidae. *Cirrimaxilla* can be distinguished from other genera easily by the combination of characters listed in the table. Almost all muraenids have 1–2 branchial pores on both head sides, but these pores cannot be found clearly in *Cirrimaxilla*. The characteristics of hooked fangs of *Cirrimaxilla* is special within the Uropterygiinae, and only *Cirrimaxilla* and *Channomuraena* have a protruding lower jaw in Muraenidae. *Channomuraena* is the genus which is most similar to *Cirrimaxilla* among all genera of muraenid. But *Cirrimaxilla* has its unique dentition, petal-like rim of posterior nostril, and many beard-like cirri on both jaws which should be important enough to elect it as an independent genus. However since *Channomuraena* is a most distinctive genus which is closely related to no others even within the subfamily Uropterygiinae, thus the genus or even the subfamily status of these two genera may need to be further studied.

Table 1. Comparison of diagnostic characters between the new genus with other 13 different genera of Muraenidae. The character data were mainly taken from Bohle et al. (1989), Chen et al. (1994) and Randall et al. (1990).

Subfamilies and genera	Number of branchial pore	Shape of teeth	Jaws with many cirri or barbels	Low jaw protruding	Shape of posterior nostrils	Fins restricted to tail tip	Adult size (Max. TL in cm)
Uropterygiinae							
<i>Anarchias</i>	2	slender pointed	No	No	rimmed pore	Yes	Small (20)
<i>Cirrhimaxilla</i> gen. nov.	ob-scure	hooked fangs	Yes, on both jaws	Yes	oval, raised rim petal-like	Yes	Small (17)
<i>Channomuraena</i>	2	cardiform	No	Yes	raised, nontubular	Yes	Large (150)
<i>Uropterygius</i>	1-2	needle-like	No	No	round or short tubular	Yes	Small to large (120)
Muraeninae							
<i>Echidna</i>	2	molariform or conical	No	No	low raised rim	No	Small to moderate (70)
<i>Enchelycore</i>	2	long and hooked fangs	No	No	oval or long tubular	No	Small to large (110)
<i>Enchelynassa</i>	2	hooked fangs	No	No	oval with a raised rim	No	Large (150)
<i>Gymnomuraena</i>	2	molariform	No	No	short tubular	No	Large (150)
<i>Gymnothorax</i>	2	canine	No	No	nontubular or short tubular	No	Moderate to large (200)
<i>Monopenchelys</i>	1	slender pointed	No	No	round opening	No	Small (21)
<i>Muraena</i>	2	canine	No	No	short or long tubular	No	Large (180)
<i>Rhinomuraena</i>	2	small slender canine	3 barbels on low jaw	No	oval opening	No	Large (130)
<i>Sidereia</i>	2	conical	No	No	raised rim	No	Moderate (100)
<i>Strophidon</i>	2	canine	No	No	raised rim	No	Large (375)

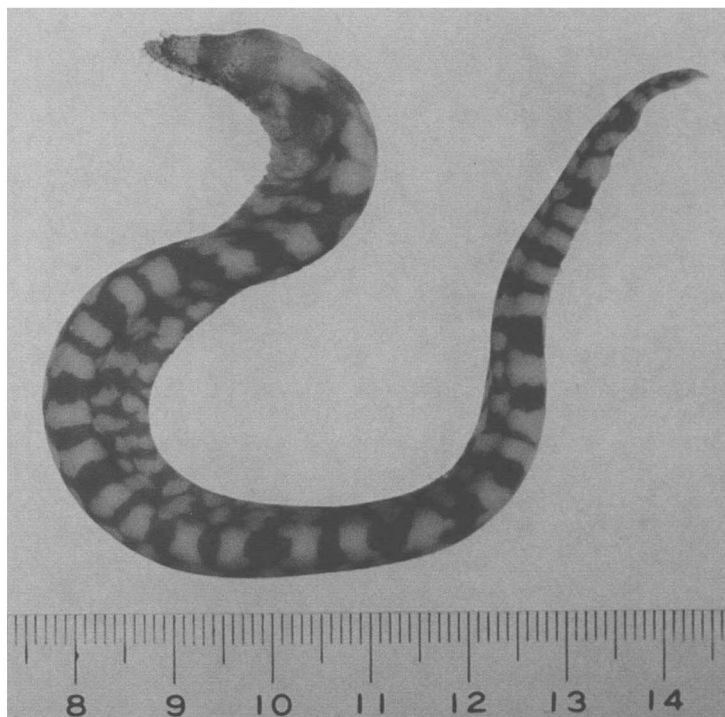


Figure 1. Photograph of *Cirrimaxilla formosa* new species.

Etymology.—From the Latin *cirr* (a curl of hair) and *maxilla* (the jaw) in reference to its barbate-like jaws. Feminine.

***Cirrimaxilla formosa* new species**

Figures 1–3

Holotype.—ASIZP 056729, 166 mm TL, female, Nanwan (120°46'E, 21°57'N), southern tip of Taiwan, tidal pool, 18 June 1987.

Diagnosis.—As for genus and other characters diagnosed below: having a relative large mouth, sharp snout, 132 total vertebrae, 76 preanus vertebrae, dorsal-fin origin above 114th vertebra, anal-fin origin below 117th vertebra and body tawny with numerous brown tiger-like bands.

Description.—Length (in mm) and proportions in TL (in parenthesis): Head length 26.3 (6.3); trunk length 75.4 (2.2); tail length 63.8 (2.6); body depth at gill opening 10.1 (16.4); body depth at anus 8.2 (20.2); predorsal length 151 (1.1); preanal length 156 (1.06); body width at gill opening 7.0 (23.7); body width at anus 5.1 (32.5). Length and proportions in HL: upper jaw length 10.1 (2.6); lower jaw length 11.0 (2.4); snout length 3.5 (7.5); eye diameter 1.7 (15.5); interorbital width 2.9 (9.1). Total vertebrae 132, preanus vertebrae 76, dorsal-fin origin above 114th vertebra, anal-fin origin below 117th vertebra.

Head pores small but distinct (Fig. 2): supraorbital canal with three pores, one of which is situated anteroventrally to anterior nostril; infraorbital canal with four pores; mandibular canal with five pores; no pore situated anterodorsally to gill opening.

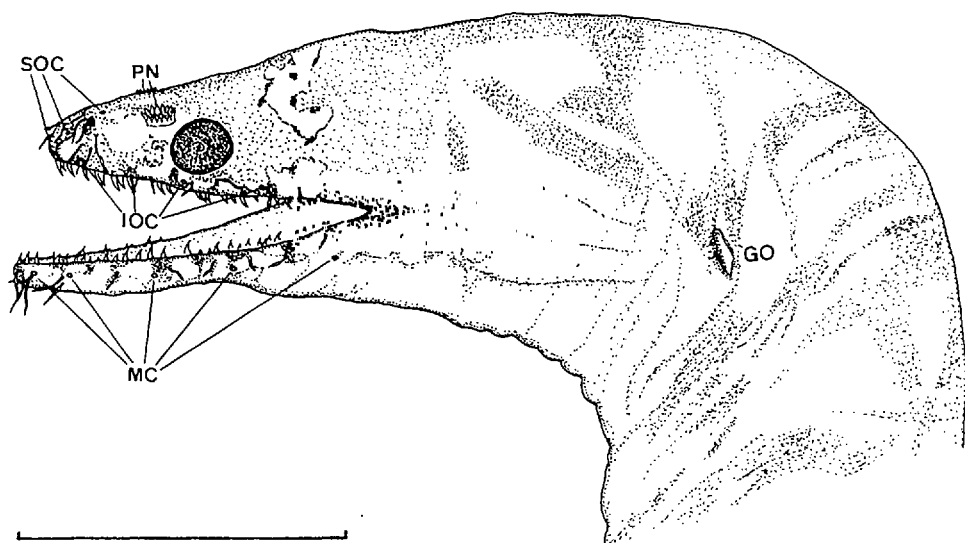


Figure 2. Lateral drawing of the head of *C. formosa*.

Anterior nostrils compressed tubular on each side of tip of snout, posterior nostril over front edge of eye with a petal-like raised rim.

Body very stout, muscular, anteriorly elliptical and posteriorly somewhat compressed. Dorsal and anal fins restricted to end of tail, where they are confluent with short pointed caudal fin. Mouth large, lower jaw protruding and slightly curved upward, snout pointed, jaws with many beard-like cirri on their margin. Gill opening nearly vertical, well located at the midlateral region of body side (Fig. 2). Mouth closes completely. Teeth on jaws and prevomer all hooked fangs without serrations in their edges. The dentition of holotype is described here (Fig. 3): Mesial part of premaxillary plate with 9 teeth forming irregular three rows, mesial 3 teeth of these rows largest and tallest; peripheral series of premaxillary plate with smaller 11 teeth. Vomerine tooth patch comprising 9 small teeth in a line on posterior portion of mouth roof. Maxillary teeth in two rows; outer row of about 15–16 small teeth and inner row of 5–7 slender fangs. Mandibular teeth in two rows, outer row smaller, close-set about 27–28, inner row teeth larger about 9.

COLOR IN ALCOHOL. Ground color of body tawny with numerous brown tiger-like bands across the body side which connect to each other and construct a thick

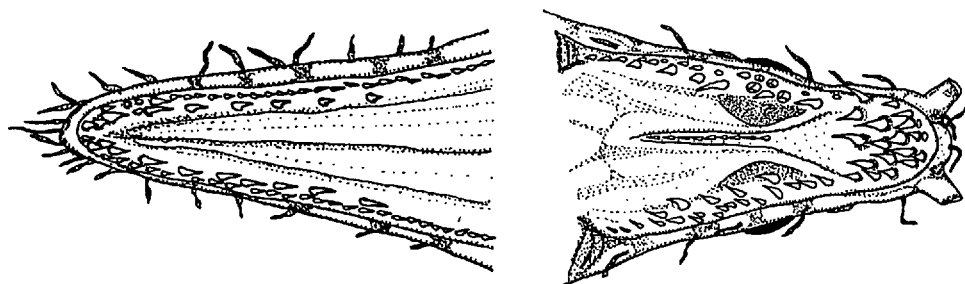


Figure 3. View of the upper and lower jaws of *C. formosa*.

rough network pattern. These bands are obscure at isthmus and abdomen region. Upper and lower jaws mottled with a series of brown blotches, corners of mouth dark brownish. Anteroventral regions of the base of anterior nostrils black-brownish. Anterior part and posterodorsal region of eye with some light patches which are rimmed with tiny dark brownish dots (Fig. 2).

Biology.—The holotype is a gravid female, with approximately 0.7–1.0 mm eggs, indicating that *Cirrimaxilla formosa* matures at less than 200 mm TL.

Distribution.—Known only from the type locality, Nan-wan, Kenting National Park, Hengchun, Ping-tung County, the southern-most County of Taiwan.

Etymology.—Derived from the Latin *formos* (beautiful) in reference to its graceful appearance and *formosa* (beautiful island) its type locality of Taiwan.

Remarks.—This description was presented verbally at the Fourth Indo-Pacific Fish Conference in Bangkok, and an abstract was printed on p. 75 of the Program and Abstracts of Papers, under the name *Barbamaxilla formosa*. However we decide to change its genus name to *Cirrimaxilla* as the permanent scientific record since “cirri” is more appropriate to describe its beards than “barbels.”

ACKNOWLEDGMENTS

We are grateful to E. B. Böhlke of the Academy of Natural Sciences of Philadelphia and Dr. J. E. Randall of Bernice P. Bishop Museum, Honolulu for examining some of our study results and offering many helpful comments. This work was partly supported by a grant of National Science Council to the junior author (NSC 77-0211-B-001-26). We want to thank Dr. D.-C. Liu, the director of the Taitung Branch of Taiwan Fisheries Research Institute for his support and encouragement throughout this work. We also wish to thank our colleagues, Miss C. Y. Wu and Y. Y. Wu, for their help including typing the manuscripts.

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DATE ACCEPTED: December 21, 1993.

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